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Published in:
The Darwinian heritage and sociobiology

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Document Version
Publisher's PDF, also known as Version of record

Publication date:
1999

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Dennen, J. M. G. V. D. (1999). Human Evolution and the Origin of War: A Darwinian heritage. In J. M. G. van der Dennen, D. R. Wilson, & D. Smillie (Eds.), *The Darwinian heritage and sociobiology* Praeger.

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HUMAN EVOLUTION AND THE ORIGIN OF WAR: A DARWINIAN HERITAGE

by J.M.G. van der Dennen

Abstract

Darwin (1871) considered the possibility of (violent) intergroup competition in (early) hominid/human evolution in his tentative explanation of the evolution of morality and other specifically human qualities:

“There can be no doubt that a tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to give aid to each other and to sacrifice themselves for the common good, would be victorious over most other tribes; and *this would be natural selection*” (Darwin, 1871, i, p. 166; italics added).

This passage, as Cronin (1991) comments, is particularly puzzling, because Darwin here seems to advance a group selection argument to tackle the problem how altruism could get established *within* the group, though he was well aware that “it seems scarcely possible... that the number of men gifted with such virtues, or that the standard of their excellence, could be increased through natural selection, that is, by the survival of the fittest”.

This paper discusses the vicissitudes of this Darwinian legacy from roughly the period of Social Darwinism to contemporary sociobiology.

In several respects Darwin was a child of his time. His ideas about war, and especially the role of warfare in human evolution, were derived, at least in part, from Spencer and Bagehot, which were, in turn, derived, at least in part, from Hobbes, Ferguson (though probably not directly), Malthus (and even Lamarck).

Recurrent themes during Darwin’s times were: 1. Group selection argument; 2. Orthogenesis or ortholinear progress and directedness of evolution; 3. Belief in the inheritance of acquired characteristics; 4. Obedience/cohesiveness/compactness as decisive factors in mankind’s progress from barbarism to civilization; 6. Ingroup-outgroup dual morality and ethnocentrism; 7. Ubiquity and constancy of warfare from the very beginning of the hominids; due to 7. Instinct of belligerence; 8. Intimate connection between hunting and warfare; and 9. The (mostly implicit) idea of “balance-of-power”.

Hobbes and Ferguson

In 1767 the Scottish philosopher Adam Ferguson published an *Essay on the History of Civil Society*, probably the first attempt at an empirical investigation of the origins of war using ethnographic data. His analysis seemed to confirm Hobbes (1651): the primitive state was indeed a state of war (*status hostilis*): “We have had occasion to observe, that in every rude state the great business is war; and that in barbarous times, mankind, being generally divided into small parties, are engaged in almost perpetual hostilities” (*Essay* 3.5).

Among the Hobbesian motives for war – competition, diffidence, and glory – Ferguson clearly assigns priority to glory. Both cannibals and kings fight for honor more than for

booty or any other material interest: “Mankind not only find in their condition the sources of variance and dissension: they appear to have in their minds the seeds of animosity, and they embrace the occasions of mutual opposition, with alacrity and pleasure” (quoted in Dawson, 1996: 4). The basic cause of war is rivalry. And Ferguson sees positive value in it, where Hobbes had seen only a necessary evil. Ferguson points out that warfare enforces civic unity, engenders civic virtue, promotes social organization, and in fact may be an essential condition for the very existence of civilization (Dawson, 1996).

In addition to maintaining the balance-of-power *between* societies, Ferguson ascribes to warfare the function of maintaining solidarity and morale *within* societies. In-group amity depends upon out-group enmity and *vice versa*. This idea could also be found, in primordial form, in classical authors, especially the Roman historians (e.g., Sallust), but Ferguson probably offers the first analysis of the phenomenon of ethnocentrism in history.

Malthus

The essence of Malthus’ (1798) doctrine – which catalyzed Darwin’s selectional paradigm (e.g., Smillie, 1995) – is that a population tends to increase faster than the means of subsistence and that this increase is checked by wars, epidemics and famines, to which he subsequently added ‘moral restraint’. He regarded warfare in the earlier ages of the world as “the great business of mankind”, and as one of the first causes and most powerful impulses of war “undoubtedly an insufficiency of room and food; and greatly as the circumstances of mankind have changed since it first began, the same cause still continues to operate and to produce, though in smaller degree, the same effects” (van der Dennen, 1990: 757).

Before Malthus, many authors had indicated the demographic factor (i.e., overpopulation) as one of the principal causes of war. The ancient Stoics and Renaissance neo-Stoics had already speculated that that warfare belongs to a providential scheme designed to keep populations from outgrowing their food supply, e.g. Plutarch (Dawson, 1996). Malthus, however, generalized the theories into a ‘law’ where war functions as one of the effective checks on population. Since that time, this idea has become quite common in various formulations (van der Dennen, 1975, 1983, 1990, 1995).

In his *Cours de philosophie positive* (1830-42) Comte dismissed the notion of a peaceful golden age at the dawn of history. On the contrary, perennial and savage warfare forced social solidarity as a defense against enemy groups (Cf. the ideas of Spencer and Bagehot discussed later in this chapter).

After Ferguson and Malthus, it was increasingly believed that the ancient ‘savages’ and the non-Western preliterate societies were belligerent and violent. John McLennan, the Scottish sociologist and lawyer who died in 1881, put the argument emphatically; “Lay out the map of the world, and wherever you find populations unrestrained by the strong hand of government, there you will find perpetual feud, tribe against tribe, and family against family” (quoted in Blainey, 1988: 58). Similarly, the world’s authority on ancient law, Sir Henry Maine, saw tribal war as a frequent occurrence. In Darwin’s times, the once-noble savage was turning into an ignoble, barbarous, and belligerent brute (e.g., Blainey, 1988). Darwin himself had occasion to observe the ‘savage’ Fuegians during his voyage with the *Beagle*, and had compared them with ‘wild

animals’.

Spencer

Herbert Spencer, the founding father of Social Darwinism, argued that the inheritance of acquired characteristics was the only possible evolutionary force responsible for the evolution of human morality. His vision was that the inheritance of acquired characteristics (a theory of evolution associated with the French naturalist Lamarck) would bridge the gap between biological and cultural evolution, forging them into one grand seamless process (e.g., Cronin, 1991).

In his *Social Statics* (1851) Spencer preached the inexorable progress in the course of history from a violent and chaotic early human state to higher stages that led ultimately to civilization and peace. War, bloodshed, enmity and cruelty – these ‘manifold evils’ – were endemic and inevitable in early history, mandated by predatory instincts. The forces that were working out the ultimate “great scheme of perfect happiness” took no account of incidental suffering, and exterminated “such sections of mankind as stand in their way, with the same sternness as they exterminate beasts of prey and herds of useless ruminants” (p. 454).

With a few exceptions, most primitives were unsociable and warlike. They were in the early ‘egoistic’ stage. However, the general direction of social evolution, according to Spencer, was from egoism to altruism. Relentless Malthusian population pressure producing recurrent wars between societies was the triggering mechanism that – despite its anti-social character – helped impel humanity forward into higher civilization.

Challenges like war and crowding fostered among conquering races qualities of social cohesion, mutual aid, inventiveness in artifacts and weapons, economic specialization and human differentiation: “From the very beginning the conquest of one people over another has been, in the main, the conquest of social man over anti-social man; or, strictly speaking, of the more adapted over the less adapted” (1851: 455; Cf. the ideas of Bagehot discussed later).

Spencer soon coined the phrase “survival of the fittest” (later adopted and adapted by Darwin) to describe this process. In later writings he explored the several ways that warfare led to progress:

Warfare among men, like warfare among animals, has had a large share in raising their organizations to a higher stage. The following are some of the various ways in which it has worked. In the first place, it has had the effect of continually extirpating races which, for some reason or other, were least fitted to cope with the conditions of existence they were subject to. The killing-off of relatively feeble tribes, or tribes relatively wanting in endurance, or courage, or sagacity, or power of co-operation, must have tended ever to maintain, and occasionally to increase, the amounts of life-preserving powers possessed by men... A no less important benefit bequeathed by war, has been the formation of large societies. By force alone were small nomadic hordes welded into large tribes; by force alone were large tribes welded into small nations; by force alone have small nations been welded into large nations (Spencer, 1873: 193-4; also quoted in Peel, 1972: 168-9).

War, thus, had played a vital role in emancipating humans from an unruly, savage state.

War had brought social cohesion during the militant stage of social evolution, the basis for emerging nation states and empires. In contemporary industrial societies, however, war and militarism, Spencer asserted, had become retrogressive and dysgenic, eliminating the 'best elements' of the population on the battlefield.

Struggle and violent competition ('pugnacity' or 'fighting instinct' were the contemporary terms), bloodshed and cruelty were generally regarded by the Social Darwinists as the crude filtering mechanisms by which species evolved and natural progress occurred. It was this 'nasty' aspect of natural selection that allegedly struck the 19th-century imagination, the emphasis on differential mortality and the ideas of the "law of the jungle" and "Nature red in tooth and claw" as the harsh ruling principles governing not only animals in their habitats but also humans in their societies (Crook, 1994; Van der Dennen, 1990, 1995).

Unless living in 'splendid isolation', human societies must be considered to be universally belligerent:

Excluding a few simple groups such as the Esquimaux, inhabiting places where they are safe from invasion, all societies, simple and compound, are occasionally or habitually in antagonism with other societies; and, as we have seen, tend to evolve structures for carrying on offensive and defensive actions... Already we have ample proof that centralized control is the primary trait acquired by every body of fighting men, be it hordes of savages, groups of brigands, or mass of soldiers. And this centralized control, necessitated during war, characterizes the government during peace (Spencer, 1876, Vol. I, Pt. 2: 576).

Spencer was also one of the first, after Ferguson, to discuss what we call today 'ethnocentrism' or the phenomenon of ingroup-outgroup differentiation. In his *Principles of Ethics* (1892-93) he wrote:

Rude tribes and... civilized societies... have had continually to carry on an external self-defence and internal co-operation – external antagonism and internal friendship. Hence their members have acquired two different sets of sentiments and ideas, adjusted to these two kinds of activity... A life of constant external enmity generates a code in which aggression, conquest and revenge, are inculcated, while peaceful occupations are reprobated. Conversely a life of settled internal amity generates a code inculcating the virtues conducing to a harmonious co-operation (Spencer, 1892, Vol. I: 322).

These two different sets of sentiments and ideas he called the 'code of amity' and the 'code of enmity'. The theme of ethnocentrism-cum-xenophobia was later elaborated by Sumner (1906; 1911), who also coined the term 'ethnocentrism'.

Lamarck

The claim that conflict was necessary for progress was (thus) by no means an exclusively Darwinian origin. Most theories of evolution at the time were progressionist in tone, and few were free of the assumption that (ortholinear) progress was intended to occur by nature or its Creator (e.g., Bowler, 1986). Also the idea of group-selection was entirely *salonfähig*, as was the idea of inheritance of acquired characteristics, associated

with the name of the much-maligned French naturalist Lamarck.

It is a curious irony of history that even Lamarck (new ed. 1873) himself noted the possibility that conflict might have played a role in human evolution. He thought (anticipating Kortlandt's ideas on this matter with more than a century) that the first race of apes to gain a prehuman level of intelligence would have driven all their rivals into remote corners of the earth and would have prevented their further advancement (Bowler, 1986).

Bagehot

In his ideas on obedience and discipline (*vide infra*), Darwin acknowledged his debt to the journalist Walter Bagehot (e.g., Crook, 1994; Dawson, 1996), a disciple of Spencer who had been called the first self-proclaimed social Darwinist because of his explicit attempts to link Darwinian biological evolution and Spencerian social evolution, obvious in the title of his famous work *Physics and Politics: Or Thoughts on the Application of the Principles of 'Natural Selection' and 'Inheritance' to Political Society* (1869, 1872). In spite of this title, the principles of Bagehot, like those of Spencer, were Lamarckian rather than Darwinian. Spencer and his followers assumed that the inheritance of acquired characteristics was quite common, and hence *all* cultural evolution must be linked to biological evolution. They perceived human evolution as a rapid, largely purposeful and directed Lamarckian process (e.g., Peel, 1972; Dawson, 1996; Van der Dennen, 1990, 1995).

Like Spencer, Bagehot assumed war had been a major agent in this process: "progress is promoted by the competitive examination of constant war" (p. 64). Like Spencer, he emphasized that warfare succeeds not so much through the genocidal elimination of rivals as by promoting superior organization and obedience to leadership: the most obedient and the tamest tribes are the strongest. "The compact [probably meaning the same as Spencer's 'cohesive'] tribes win, and the compact tribes are the tamest. Civilisation begins, because the beginning of civilisation is a military advantage" (p. 47). There was no doubt in his mind that the "strongest killed out the weakest as they could". Progress, habitually thought of as a normal fact in human society, is actually a rare occurrence among peoples. Of the existence of progress in the military art there can be no doubt, however, nor of its corollary that the most advanced will destroy the weaker, that the more compact will eliminate the scattered, and that the more civilized are the more compact (Hofstadter, 1955). As we have seen, Spencer (1851) had already voiced a similar conviction.

Wars also encouraged innovation and variability. Darwin noted Bagehot's argument that warfare could result in racial mixtures that begat "beneficial variability".

Bagehot attempted to reconstruct the pattern of growth of political civilization in the manner of evolutionary ethnologists like Lubbock and Tylor, from whom he drew some of his data.

Darwin

In his first notebook on transmutation of species (1837) Darwin denied that humans had instinctive urges, or 'hereditary prejudices' to conquer each other (Darwin, *Beagle Diary*, 22 December 1835; *First Notebook on Transmutation of Species*, 89 [July 1837-February 1838]; cited in Gruber & Barrett [1974: 184-7]).

The Descent of Man (1871) gives Darwin's fullest account of war and human instincts,

and it borrowed more frankly than the *Origin* from current social theory: the anthropology of Maine and Lubbock, and the social psychology of Spencer, Galton, and Bagehot (e.g., Jones, 1980; Moore, 1986; Crook, 1994).

Though he did not talk in terms of instinctive pugnacity in humans, he clearly acknowledged that endemic warfare and genetic usurpation had been important selective forces in human history. E.O. Wilson (1975: 573) says that *The Descent of Man* was, in this respect, “a remarkable model that foreshadowed many of the elements of modern group selection theory”.

In this magnificent two-volume book Darwin argued that any social animal would acquire a moral sense once its intellect had developed to a certain level (cf. de Waal, 1996). The crucial problem was to explain why human intelligence had developed further than that of any other social animal, so as to permit the emergence of the moral sense.

Darwin was also aware of the ethnocentrism and xenophobia in social organisms. In animals living in groups, he wrote, “sympathy is directed solely towards members of the same community, and therefore towards known, and more or less loved members, but not to all the individuals of the same species” (Darwin, 1871, Vol. I: 163).

As regards humans, Darwin stated that “the confinement of sympathy to the same tribe” must have been the rule. This was for him one of the chief causes of the low morality of the savages. “Primeval man”, he argued, “regarded actions as good or bad solely as they obviously affected the welfare of the tribe, not of the species”. Among the living tribal peoples, he added, “the virtues are practised almost exclusively in relation to the men of the same tribe” and the corresponding vices “are not regarded as crimes” if practised on other tribes (Darwin, 1871, Vol. I: 182, 179).

Apparently Darwin had formed the opinion that natural selection acts to a great extent through intergroup competition. In his own words, “natural selection, arising from the competition of tribe with tribe,...would, under favourable conditions, have sufficed to raise man to his high position” (Darwin, 1871, Vol. I: 97).

This competition, in his opinion, could be carried out through direct conflict, even in bloody forms. “When of two adjoining tribes one becomes less numerous and less powerful than the other”, he maintained, “the contest is settled by war, slaughter, cannibalism, slavery, and absorption” (1871, Vol. I: 202). He was quite aware, however, that competition between groups had to be combined with cooperation within them (e.g., Melotti, 1987).

In *The Descent of Man*, Darwin explicitly suggested that warfare had been at one time an agent in human evolution. He observed that prehistoric humans as well as contemporary ‘savage’ societies were constantly at war with each other. There was a never-ending fight for survival. The nobler sides of humanity, the moral faculties, sociality and social sympathies, had their darker side, for they were forged in war and were, in turn, used to improve fighting and warfare (Darwin was indebted to Bagehot on this issue; e.g., Crook, 1994). Intelligence and skill in hunting and fighting had been a critical factor, he asserted, in Man’s cultural progression:

We can see, that in the rudest state of society, the individuals who were the most sagacious, who invented and used the best weapons or traps, and who were best able to defend themselves, would rear the greatest number of offspring. As a tribe increases and is victorious, it is often still further increased by the

absorption of other tribes... (Darwin, 1871, Vol. I: 196; 2nd ed. 1874: 145).

From the remotest times tribes that were not only robust, but socially cohesive, skilled in organization, technology and weaponry (Darwin called this “superiority in the arts”), tribes that included “a great number of courageous, sympathetic and faithful members, who were always ready to warn each other of danger, to aid and defend each other”, had genetically usurped other tribes (p. 199). As peoples highly endowed with social, but also military discipline, triumphed over others, “the social and moral qualities would tend slowly to advance and be diffused throughout the world” (p. 200).

In the following passages I liberally paraphrase Cronin’s (1991) account: Darwin starts by considering competition between groups. If a group that has a high proportion of unselfishly devoted members comes into conflict with a group that has a high proportion of selfish members, it is easy to see that the group of altruists will triumph. Their discipline, fidelity, courage and other such qualities will soon ensure victory.

Let it be borne in mind how all-important in the never-ceasing wars of savages, fidelity and courage must be. The advantage which disciplined soldiers have over undisciplined hordes follows chiefly from the confidence which each man feels in his comrades. Obedience, as Mr. Bagehot has well shewn, is of the highest value, for any form of government is better than none. Selfish and contentious people will not cohere, and without coherence nothing can be effected. A tribe rich in the above qualities would spread and be victorious over other tribes... (Darwin, 1891, Vol. I: 199-200).

But the problem is to explain how unselfishness ever got off the ground in the first place: “[H]ow within the limits of the same tribe did a large number of members first become endowed with these social and moral qualities, and how was the standard of excellence raised?” (Darwin, 1891, Vol. I: 200). Unselfish members would not have the most offspring, Darwin realized – quite the contrary:

It is extremely doubtful whether the offspring of the more sympathetic and benevolent parents, or of those which were the most faithful to their comrades, would be reared in greater number than the children of selfish and treacherous parents of the same tribe. He who was ready to sacrifice his life... rather than betray his comrades, would often leave no offspring to inherit his noble nature. The bravest men, who were always willing to come to the front in war, and who freely risked their lives for others, would on an average perish in larger number than other men (Darwin, 1891, Vol. I: 200).

He concedes that the problem looks almost intractable: “Therefore it seems scarcely possible... that the number of men gifted with such virtues, or that the standard of their excellence, could be increased through natural selection, that is, by the survival of the fittest” (1891, Vol. I, 200-201).

Darwin sees two ways out of the difficulty. One is reciprocity: “[E]ach man would soon learn that if he aided his fellow-men, he would commonly receive aid in return”. But

when he turns to his other solution, he seems to suggest that individual sacrifice for the sake of the group can evolve because it pays off in intergroup competition:

It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other men of the same tribe, yet that an advancement in the standard of morality and an increase in the number of well-endowed men will certainly give an immense advantage to one tribe over another. There can be no doubt that a tribe including many members who, from possessing in a high degree the spirit of patriotism, fidelity, obedience, courage, and sympathy, were always ready to give aid to each other and to sacrifice themselves for the common good, would be victorious over most other tribes; *and this would be natural selection* (Darwin, 1891, Vol. I: 203; italics added).

This passage, as Cronin (1991) comments, is puzzling. Darwin specifically said that he is now tackling the problem how altruism gets established *within* the group; he takes care to remind us “that we are not here speaking of one tribe being victorious over another”. And yet he seems to be speaking of exactly that.

The problem with Darwin’s theory is a common problem with group-selectionist arguments (despite the recent revival of group-selectionism): it is hard to imagine group selection spreading some trait that genic selection or individual selection on its own would not favor; “it is hard to imagine natural selection resolving a direct conflict between group welfare and individual welfare in favor of the group” (Wright, 1994: 707). The problem is unsolved yet.

Like most social theorists of the nineteenth century, Darwin assumed that history was the record of Man’s unilineal progress from savagery to civilization, and his theory of social progress was similar in many respects to Spencer’s (e.g., Greene, 1959).

He wrote to Lyell in 1859; “I can see no difficulty in the most intellectual individuals of a species being continually selected; and the intellect of the new species thus improved, aided probably by effects of inherited mental exercise, I look at this process as now going on with the races of Man; the less intellectual races being exterminated” (*Life and Letters*, Vol. II: 7; quoted in Greene, 1959: 320)).

The acquisition of tools, the use of fire, and the “half-art and half-instinct” of language would have stimulated the development of the brain and of the “social sentiments”.

These, in turn, brought about group progress through imitation of the inventions and discoveries of the most gifted members of the group. The practice of each new art of war

must likewise to some degree strengthen the intellect. If the invention were an important one, the tribe would increase in number, spread, and supplant other tribes. In a tribe thus rendered more numerous there would always be a greater chance of the birth of other superior and inventive members. If such men left children to inherit their mental superiority, the chance of the birth of still more ingenious members would be somewhat better, and in very small tribes decidedly better (See also Lumsden & Wilson’s [1983: 760-65] comment on this quote).

Meanwhile, social solidarity and common morality developed by a similar process of

natural selection. Every advance in morality and social solidarity would have survival value for the group in which it occurred, Darwin added:

At all times throughout the world tribes have supplanted other tribes; and as morality is one important element in their success, the standard of morality and the number of well-endowed men will thus everywhere tend to rise and increase (Darwin, 1871, Vol. I: 166).

Tribes in which noble behavior was high would come to dominate those in which it was low, thus group selection would favor tribes of brave and self-sacrificing individuals over the selfish and cowardly, whose undiscipline and lack of moral fiber would result in their succumbing should the groups come into conflict (Richards, 1987; Cronin, 1991).

What Darwin had in mind was clearly a model of group selection: groups constantly being supplanted, conquered, incorporated or exterminated by other groups, the whole process being driven by intergroup competition. As Alexander (1974 et seq.) suggested, humans are an excellent model for the kind of group selection Darwin envisioned.

Wallace

As we have seen, the human capacity for culture and all that it entails (intelligence, language, morality, altruism, justice, etc.) posed a real and serious problem to the early evolutionists (e.g., Greene, 1959; Cronin, 1991). Alfred Russell Wallace, the co-founder of classical Darwinian evolutionary theory, for example, became more and more convinced that natural selection could not possibly account for our advanced mental attributes and the distinctly human brain. And, what is worse, some of these refined capacities would even have been a downright nuisance and a danger “in the severe struggle he [the savage] has to carry on against nature and his fellow-man” (Wallace, 1891: 192).

Wallace (1864) spoke of the “decreasing combative and destructive propensities” as an early factor in the development of Man’s social and sympathetic traits (clxii-clxiv). From the very beginning, the various races of Man would henceforth continue with very little morphological modification. In the mental and moral sphere, however, there would be a severe competition resulting in the spread of the best endowed races and the gradual extinction of the less gifted ones. In this competition some races would “advance and become improved merely by the harsh discipline of a sterile soil and inclement seasons” (Greene, 1959: 377), while others, inhabiting tropical regions, would stagnate from lack of environmental challenge.

In Wallace’s opinion, the true “grandeur and dignity of Man” lay in his unique ability to transcend the law of natural selection which ruled the fates of all lower animals.

Looking at the future, Wallace painted a dithyrambic picture of progressive cultural advance issuing from the steady predominance of “the more intellectual and moral” races over the “lower and more degraded” races in the clash of cultures. These ideas were clearly derived from Spencer (Greene, 1959; Peel, 1972).

Huxley

Darwin strongly disagreed with Wallace’s view, as did, initially, Thomas Huxley. Eventually, however, Huxley (whose epithet ‘Darwin’s bulldog’ fitted him) came to

believe that human morality must have been the result of cultural evolution only: the struggle for existence in nature, he held, is so profoundly red-in-tooth-and-claw that it would smother a developing morality at birth because morality must necessarily work *against* nature: “[S]ince law and morals are restraints upon the struggle for existence, the ethical process is in opposition to the principle of the cosmic process [the Hobbesian war of each against all], and tends to the suppression of the qualities best fitted for success in that struggle” (Huxley, 1894: 37).

Huxley characterized these doctrines as the ‘gladiatorial’ theory of existence, embodying an ethic of “reasoned savagery”, as the weak were perpetually eliminated by the strong, or the most ruthless, or the most ‘aggressive’ individuals, groups, nations, etc. The “weakest and stupidest went to the wall” (Huxley, 1888: 204). The toughest and shrewdest survived. Not surprisingly, Huxley rejected the myth of the Noble Savage (Greene, 1959; Richards, 1987; Cronin, 1991).

Gumplowicz

In his *Der Rassenkampf*, Gumplowicz (1883) claimed to have found the genesis of human society in the primal conflicts of primitive hordes bonded together by intense feelings of kinship and instinctive pugnacity against rival hordes and aliens. According to him, mankind has a polygenist origin: each race comes from a distinct stock.

Consequently, fierce antagonism and hatred have always existed among the human races, and will continue to divide them till the end of time. “The perpetual struggle of the races is the law of history”, Gumplowicz concluded, “while perpetual peace is nothing but the dream of the idealists” (quoted in van der Dennen, 1995: 220).

Munro

Munro (1893, 1897) argued that the unprecedented human level of intelligence was developed because of the agility of the hand, once it had been freed from the task of locomotion, although it was also promoted by the constant warfare between tribal groups.

Sumner

Continuing Spencer’s functionalist line of thought was the American sociologist William Graham Sumner. “It is the competition of life” Sumner (1911) asserted, “which makes war, and that is why war always has existed and always will. It is the condition of human existence” (quoted in van der Dennen, 1990: 153). The foundation of human society, said Sumner (1911; Sumner & Keller, 1927), is the man/land ratio. Conflict over the means of subsistence is the underlying fact which shapes the nature of human society. When population presses upon the land supply, earth-hunger arises, races of men move across the face of the world, militarism and imperialism flourish, and conflict rages. Where men are few and soil is abundant, the struggle for existence is less savage: “Wherever there is no war, there we find that there is no crowding” (van der Dennen, 1990: 153). Sumner emphasized group factors (including the binding power of folkways and mores) more strongly than did Spencer, and he was considerably less optimistic about the direction of evolutionary change (Hofstadter, 1955; Schellenberg, 1982). Sumner (1906; 1911), who coined the term ‘ethnocentrism; for the dual code of conduct identified by Spencer, heavily implicated ethnocentrism, and its collateral xenophobia, in the evolution of warfare. In his *Folkways*, Sumner (1906), echoing Spencer and

Bagehot, writes:

The exigencies of war with outsiders are what make peace inside, lest internal discord should weaken the in-group for war. The exigencies also make government and law in the in-group, in order to prevent quarrels and enforce discipline. Thus war and peace have reacted on each other, and developed each other, one within the group, the other in the inter-group relations. The closer the neighbors, the stronger they are, the intenser the warfare, and then the intenser is the internal organization and discipline of each" (Sumner, 1906; as quoted in van der Dennen, 1987: 4).

Marshall, Inge, and Hobson

The special blend of militant nationalism, pugnacious patriotism, and expansionist imperialism is called jingoism. In his *The Psychology of Jingoism*, Hobson (1901) attributed it to man's "ancient savage nature" lurking somewhere in "sub-conscious depths", under the superstructure or thin veneer of civilization. He spoke of the "animal hate, vindictiveness, and bloodthirstiness" that lurked in the mildest-mannered patriot. Also Inge (1915) traced the "perverted patriotism" that according to him caused war to "the inborn pugnacity of the *bête humaine*". These are by now familiar variants of Plato's "Beast Within".

Marshall (1898), also writing in the *fin de siècle* instinct psychology tradition, included among his "tribal instincts of a higher type", the patriotic instinct, which was aroused by aggressive threats from neighboring nations, or by opportunity for tribal aggrandizement. He explained the self-sacrificial behavior of warriors in terms of biological sacrifice, a form of extreme altruism that paid off in "tribal advantage" (Crook, 1994).

Kropotkin

Far from being the uncritical devotee of the "Noble Savage myth" as he is often represented, Kropotkin (1902) argued that the life of 'savages' was split between two sets of actions and ethics, that applying within the group, and that applying to outsiders: "Therefore, when it comes to a war the most revolting cruelties may be considered as so many claims upon the admiration of the tribe. This double conception of morality passes through the whole evolution of mankind, and maintains itself until now" (quoted in Crook, 1994: 109).

McDougall

McDougall (1908, 1915) developed the, by now familiar, theme that social solidarity and altruism arose from the need to organize for war. As group combat superseded individual fighting in early human history, he contended, success came to depend more and more upon the capacity of individuals for "united action, good comradeship, personal trustworthiness", and especially the ability "to subordinate their impulsive tendencies and egotistic promptings to the end of the group" (quoted in Crook, 1994: 109). McDougall adopted the concept of an 'instinct of pugnacity' which had been propagated by William James (1890), who had also developed a theory of the co-evolution of human hunting and warfare (*vide infra*). Echoing Darwin and Bagehot, McDougall (1915) wrote:

“Such conflict of groups could not fail to operate effectively in developing the moral nature of man; those communities in which this higher morality was developed would triumph over and exterminate those which had not attained it in equal degree. And the more the pugnacious instinct impelled primitive societies to warfare, the more rapidly and effectively must the fundamental social attributes of men have been developed in the societies which survived the ordeal” (McDougall, 1915; as quoted in Barash, 1991: 162).

Patrick, Read, and Davie

According to Patrick (1915), “man the fighting animal” had evolved out of conditions of incessant conflict between races, with the continuous extermination of the unfit.

Survival in this perpetual struggle had been the product of order and mutual aid within groups, but with fear, hatred, and the rule of might prevailing between groups.

Read (1920) contended that hominids and early humans formed hunting packs that were predisposed to be aggressive toward all outsiders. “Wars strengthened the internal sympathies and loyalties of the pack or tribe and its external antipathies, and extended the range and influence of the more virile and capable tribes”.

The next author to elaborate the theme of ethnocentrism in relation to primitive warfare was Davie (1929), who sketches a truly Hobbesian picture of the ‘savage’ world, pointing out that the relation of primitive groups to one another, where agreements or special conditions have not modified it, is one of isolation, suspicion, hostility and war; a *status hostilis*, if not a regular *status belli*. Yet within the tribe the common interest against every other tribe compels its members to unite for self-preservation. “Thus a distinction arises between one’s own tribe – the ‘in-group’ – and other tribes – the ‘out-group’; and between the members of the first peace and cooperation are essential, whereas their inbred sentiment toward all outsiders is one of hatred and hostility. These two relations are correlative” (quoted in van der Dennen, 1987: 6). Thus, Davie did not add much to Sumner’s arguments in terms of theoretical sophistication. He did, however, summarize the then available ethnological evidence of ethnocentrism in preindustrial societies from all over the world.

Keith

In his *Darwinism and What It Implies* of 1928 Sir Arthur Keith wrote: “Competition is not confined to human rivalries and struggles; it pervades the whole kingdom of life; it is the basis of Darwin’s doctrine of evolution; it has been, and ever will be, the means of progressive evolution” (Keith, 1928: 18-19).

Already during World War I Keith had begun to feel that tribal warfare played a role in evolution. He drew attention to the gregarious instinct in mankind and postulated that at a very early stage in our evolution, human beings had joined into competing tribal groups – of which the modern nations were the civilized equivalent. What is now called patriotism is the modern manifestation of this ‘herd instinct’ that had once been essential for evolution (Bowler, 1986).

In his *Essays on Human Evolution* (1946) and *A New Theory of Human Evolution* (1948) two years later, he expounded the final version of his thesis. Nature had conditioned human instincts to ensure the maintenance of barriers between tribes, so that each could develop its full potential in isolation. Keith now openly criticized Elliot Smith’s theory of a prehistoric golden age, insisting that the early tribes of mankind had

always been in conflict with one another. Tribal competition had been vital both to the original differentiation and to the later development of the races. Both cooperation and competition are deeply rooted in the evolutionary history of all social species. However, their highest development is found in man, the species that has risen highest in the scale of beings. For Keith, this was hardly a coincidence: indeed, the success of the human species had been secured by cooperation within groups and competition between them. This combination also favored the rise of both the 'good' and the 'bad' qualities of human beings. Both of these sets of opposite qualities, he stressed, have survival values, and only their balance can assure progressive, evolutionary change (Melotti, 1987; Cf. the ideas of Ferguson).

HUNTING

In the *New Theory* Keith also pointed to another possible source of human belligerence. This was the hunting instinct, the importance of which had been noted by a number of earlier writers.

Aristotle (*Politics*, 1.8) had already suggested that warfare originated as an offshoot of hunting, but later writers apparently paid little attention to this idea (Dawson, 1996). William James (1890), George Crile (1916), Harry Campbell (1917) and Carveth Read (1917, 1920) all anticipated Dart's and Ardrey's 'hunting hypothesis' – revived later on by Washburn and his Carnivorous Psychology school – by emphasizing how man, the hunting animal, hunted in packs which intensified human combativeness. In war they simply hunted each other (Some other predecessors of the hunting hypothesis are discussed in Cartmill [1994]).

Hunting and warfare, both almost exclusively male activities in primitive groups, were explained as products of the sexual division of labor and associated with the ubiquitous human social patterns of male bonding and male supremacy (e.g., Washburn & Lancaster, 1968; cf. Tiger & Fox, 1971).

No one seems to have paid much attention the predecessors of the hunting hypothesis. Cartmill (1994) notes that even Raymond Dart was not aware of their work. According to Bowler (1986), Dart assumed from the start that *Australopithecus* engaged in the hunting of at least small animals, although it was only later in his career that he came to see hunting as a major force in the shaping of human nature. In his *Adventures with the Missing Link* of 1959, Dart now spoke openly, in a convoluted prose with high protein content, of modern humanity's loathsome cruelty as a continuation of the blood lust of our carnivorous and cannibalistic ancestors (1959: 201). Ardrey drove home this theme, becoming a leading exponent of what was sometimes known as 'the anthropology of aggression'.

Recently, the relation between warfare (lethal male raiding) and hunting has been explored by van der Dennen (1995) and Wrangham (1999).

Both lethal raiding and hunting are carried out primarily by adult males acting in coordinated groups: both involve otherwise unusual actions such as searching for large prey, stalking, chasing, seizing, wounding and killing; both are more elaborated in humans and chimpanzees than in other primates. Furthermore, the behaviors shown by chimpanzees towards mammalian prey are partly similar to

those they show towards conspecific victims, including quiet stalking during a hunt, intense arousal during the attack phase (pilo-erection, intimidation displays) and ambivalence towards the victim. In contrast, the behaviors shown by specialised carnivores towards their prey are not like those directed towards conspecifics. For example, social carnivores do not show signs of excitement when killing prey, and tend to use a killing bite (van der Dennen, 1995). Such observations suggested to Eibl-Eibesfeldt (1975) and Goodall et al. (1979) that among chimpanzees, similar motivational factors may be involved in intraspecific killing and hunting. Eibl-Eibesfeldt (1975) specifically proposed that 'Motivationally, hunting behavior in chimpanzees has probably been derived from intraspecific aggression' (translated and quoted by van der Dennen, 1995, p192). The essential logic is that if hunting had arisen independently, it should be expected to show more similarities to the patterns displayed by social carnivores. Van Hooff (1990) agreed, suggesting that if selection favored the ability to hunt and kill conspecifics, the psychological mechanisms that evolved would be easily coopted towards obtaining meat. Note that these ideas are opposite to the killer ape hypothesis. The killer ape hypothesis suggested that intraspecific violence evolved from hunting, whereas Eibl-Eibesfeldt (1975), Goodall (1986) and van Hooff (1990) proposed that hunting evolved from intraspecific violence. As van der Dennen (1995) notes, the relationship between intraspecific killing and hunting probably now involves multiple directions. For example, in some human populations hunting may provide practice for warfare (Otterbein, 1997). Disentangling these relationships will therefore not be easy (Wrangham, 1999: 24).

Besides the hunting hypothesis, which still attracts many scholars, all main themes regarding the origin and evolution of human warfare, i.e., ethnocentrism, human brain expansion, and balance-of-power thinking, have found advocates after the emergence of (human) ethology, sociobiology, and human ecology. I shall briefly visit the recent developments.

ETHNOCENTRISM

Spencer's, Sumner's and Davie's views exerted considerable influence on subsequent social thought. For example, Murdock (1948), a prominent American anthropologist, repeated that "intergroup antagonism is the inevitable concomitant and counterpart of in-group solidarity" (1949: 83).

Ethnocentrism is a major explanatory category in contemporary theories of primitive warfare. The founding father of modern sociobiology, E.O. Wilson (1978) regards it as a culturally hypertrophied biological predisposition (which has evolved via kin selection), drawing heavily from Leach's (1965) split universe imagery:

The practice of war is a straightforward example of a hypertrophied biological predisposition. Primitive men cleaved their universe into friends and enemies and responded with quick, deep emotion to even the mildest threats emanating from outside the arbitrary boundary...

The force behind most warlike policies is ethnocentrism, the irrationally exaggerated allegiance of individuals to their kin and fellow tribesmen (E.O. Wilson, 1978; as quoted in van der Dennen, 1987: 6).

Also Meyer (1977 et seq.) regards ethnocentrism and xenophobia as cultural hypertrophies. He argues that the extreme ethnocentrism on the primitive level sets preconditions for violent interaction, while specific conditions serve as triggers. He suggests that the basic motivation in violent encounters between members of distinct groups is not 'aggression' impelled by some sort of drive, instinct, or appetite, but 'fear'. Fear generated by the position of the cultural 'we-group' in a threatening universe made up of 'they-groups', endangering the social cosmos by their very existence. While any social system requires boundary maintenance and mutual identification of actors, man's condition as a psychocultural animal brings about hypertrophifications of these needs.

According to Eibl-Eibesfeldt (1970 et seq.), destructive intergroup aggression in humans depends, to a large extent, on "cultural pseudospeciation". Owing to this process, first analyzed by Erikson (1964, 1966, 1984), ethnic groups tend to perceive one another as different species and to behave accordingly. Therefore, war appears to be the result of our innate repulsion for outsiders, not a simple effect of aggressive drive. By instigating intergroup aggression, pseudospeciation favors intragroup solidarity, friendship, and altruism.

MacCurdy (1918) foreshadowed this valuable concept of pseudospeciation in his *Psychology of War*. According to him, early tribal warfare had fixed the idea that strangers were another species, and thus was overcome the natural inhibition against killing conspecifics. Humans by their "herd nature" were doomed to split into groups, and these groups behaved biologically like separate species struggling for existence. During times of war, he suggested, humans still felt vestigial emotions of hostility to their enemies as species other than themselves (Crook, 1994).

The group, according to Eibl-Eibesfeldt (1982), is an important level of selection in humans, and many traits that are disadvantageous to the individuals are stabilized by selection at this level. He dwells upon indoctrinability and the inclination to polarize values. According to him, these traits – which create a readiness for self-sacrifice for the group – are difficult to explain by sheer individual selection and probably have initially evolved for the defense of the family.

The theme of ethnocentrism in an evolutionary context has been elaborated more recently by Van den Berghe (1981); Reynolds, Falger & Vine (1987); Shaw & Wong (1989); Peres & Hopp (1990); Vanhanen (1992, 1999); Flohr (1994); Van der Dennen (1995, 1999); and Thienpont & Cliquet (1999). These authors all agree with the basic tenets of van den Berghe's theory of ethnocentrism as extended kin selection. Ethnic sentiments are extensions of kinship sentiments. Ethnocentrism is thus an extended form of nepotism – the propensity to favor kin over nonkin. Both cooperation and conflict in human societies follow a calculus of inclusive fitness.

BALANCE-OF-POWER

Lorenz (1966) and Monod (1971) discussing the evolutionary origins of human

destructive intraspecific aggression found its roots in the 'malignant' intergroup intraspecific selection that had occurred, in their opinion, in the late Stone Age. In fact, they believed that, when man had more or less mastered the inimical forces of his extraspecific environment (such as hunger, cold, and predatory animals), war became the main selective factor in human evolution (Cf. Alexander's ideas to be discussed later on).

This rationale for Paleolithic intergroup conflict was particularly emphasized by Bigelow (1969 et seq.) who, in contrast to Lorenz and Monod, maintained that intergroup intraspecific selection had beneficial effects on human evolution, in particular it brought about the relatively rapid tripling in size of the emergent human brain (a theme also elaborated by Pitt [1978]).

Bigelow's main thesis is that intergroup competition conferred a strong selective advantage on cooperation within and between groups. He points out that cooperation-for-conflict was imperative for sheer survival and that it also had important spin-offs in peacetime. Throughout man's evolutionary history the more successful groups were those better-organized, and especially those whose members had the intelligence and foresight to cooperate with other groups. Even the highest human virtues were brought forth in response to the dangers threatened by the lowest of human qualities. These apparent opposites, for him, "were not even two different sides of the same coin, but were as intimately interdependent as our brains and hearts are" (Bigelow, 1969: 7). Though they seem to be opposing tendencies, he emphasizes, aggressive competition and cooperative behavior are highly interdependent parts of a single system and have evolved together (cf. the views of Ferguson, Sumner, Davie, and Keith).

Remarkably, Bigelow did not deduce that humans have some kind of innate propensity (such as an aggressive 'instinct' or disposition) to intergroup violence. On the contrary, he suggested that, exactly because war had selected for cooperation within and between groups, and hence for communication and intelligent self-control, humans are now in a favorable position to prevent and abolish war (Melotti, 1987).

At some time in the course of human evolution, other human groups replaced lions and leopards as the major threat to survival, and Bigelow believes this transition marked the beginning of distinctively human evolution. The transition was probably very gradual, but at the dawn of history other humans had clearly become man's most dangerous enemy.

In the case of human evolution, a very powerful selective force was acting against the smallest brained humans, even after their brains were twice as large as those of any other primate. Had this not been so, the average size of the human brain would not have been doubled within such a relatively brief span of evolutionary time. This force was acting on the human line alone, for in no other primate species were the smaller brained individuals placed at such a severe selective disadvantage. The selective force that produced distinctively human evolution seems to have been contained within the human species itself.

Bigelow believes it is unlikely that our ancestors would have lived in peace throughout the Pleistocene, only to begin, very suddenly, to fight savage wars at the dawn of history. It is, therefore, reasonable to assume that intergroup competition was a selective factor before our ancestors became human, and long before they became big game hunters. It is important to note, Bigelow asserts, that intergroup competition can be an important selective force without high levels of violence and killing.

Wilson (1975) suggested warfare might have continued to serve this adaptive function well into historic times:

By current theory, genocide or genosorption strongly favoring the aggressor need take place only once every few generations to direct evolution. This alone could push truly altruistic genes to a high frequency within the bands... The turnover of tribes and chiefdoms estimated from atlases of early European and Mideastern history suggests a sufficient magnitude of differential group fitness to have achieved this effect (E.O. Wilson, 1975: 573-4).

Alexander (1974 et seq.; Alexander & Borgia, 1978), another ‘ancestor’ of modern evolutionary biology, even reasoned that especially *human* groups would be expected to have been amenable to powerful group selection:

For two reasons human social groups represent an almost ideal model for potent selection at the group level. First, the human species is (and possibly always has been) composed of competing and essentially hostile groups that frequently have not only behaved toward one another in the manner of different species, but also have been able quickly to develop enormous differences in reproductive and competitive ability because of cultural innovation and its cumulative effects. Second, human groups are uniquely able to plan and act as units, to look ahead and purposely carry out actions designed to sustain the group and improve its competitive position (Alexander & Borgia, 1978: 470).

Alexander (1979) agrees with Bigelow that intergroup aggressive competition was a prime mover in human evolution and that it selected for intragroup altruism as well as for other forms of complex behavior. He argues that warfare must have had a long period of preadaptation: hominids first formed small bands for defense against predators; then increasingly turned to the hunting of game; then at some point the primary purpose of group organization became defense against other hominid bands. At the last stage escalation became necessary to achieve a margin of safety, setting up the self-perpetuating chain reaction known as the balance-of-power. Alexander revived Spencer’s notion that warfare explains why large groups are advantageous and why human groups have tended to increase in size throughout history.

The attribute that could explain human uniqueness, he argued, was an increasing prominence of direct intergroup competition – when the hominids or humans became ‘ecologically dominant’ (Slurink, 1993, 1994; Van der Dennen, 1995) – leading to an overriding significance in balances-of-power among competing social groups, in which social cooperativeness and eventually culture became the chief vehicle of competition. Alexander & Borgia (1978) had already underlined that human individuals must have begun to win the reproductive race by cooperating to compete.

Culture continually rebuilds the differences between neighboring human populations. Culture is the great unbalancer (or ‘pseudo-speciator’) that reinforces human tendencies to live and compete in groups and to engage in an unusual (and unusually ferocious) group-against-group competition (Melotti, 1987).

Alexander also endorses the war-makes-states theory: the rise of the nation-state “occurred as a result of the interactions of neighboring competitive and hostile groups as

they expanded their alliances and cemented unities in a balance of power race” (Alexander, 1979: 249).

According to Tiger & Fox (1971), wars arrived on the scene when tools were perfected into weapons, and the expanding and convoluting human brain was able to cope with organization, on the one hand, and the development of the categories of friend and foe, on the other.

Also Baer & McEachron (1982) include weapons technology in their account of the evolution of intergroup conflict. With the development of increasingly dangerous weapons, the groups became more closed and aggressive. Intergroup conflict rose to higher levels and this led to a positive biocultural feedback system. Intergroup conflict selected for greater intelligence (greater ability to learn, communicate, plan, have foresight, etc.), and such enhanced mental capacity in turn created better weapons and made the group itself a better fighting unit. Thus the selective pressures for conflict increased in force – and the cycle began again, at a higher level. This process probably operated in other ways as well. Closing the hominid groups enhanced the genetic relatedness within the groups and decreased it between them. This must have fostered aggressive xenophobia.

In Corning’s (1983) evolutionary scenario, an ever-widening system of synergistically interacting biological and social traits enabled the evolving hominids to cooperate and compete with one another in meeting survival and reproductive needs. Thus the key to human successful adaptation was competition-through-cooperation or cooperation-for-competition, a behavioral system that must have been effective long before the recent millennia for which we have evidence of overt, direct conflict between human groups. According to Corning, egoistic cooperation, kin selection, and functional group selection concurred to reinforce individual selection rather than working against it. Recent representatives elaborating these evolutionary scenarios are Slurink (1993, 1994) and Van der Dennen (1995).

Final Comments

The themes of hunting, ethnocentrism, and balance-of-power thinking do not, of course, exhaust the Darwinian legacy in relation to the evolutionary origin of war. Other themes, also tangentially touched upon by the authors dealt with above, are hominid/human bipedalism, exponential brain expansion, mating system, (hyper)sociality and altruism, intergroup agonistic behavior in group-territorial organisms (especially social carnivores and primates), lethal male raiding in chimpanzees (*Pan troglodytes*) – and the distinct possibility that chimpanzee-hominid common ancestor already had this lethal male raiding pattern in its behavioral repertoire (e.g., Wrangham, 1999).

These and similar considerations have driven Slurink (1993, 1994) and van der Dennen (1995) to develop a more or less integral scenario of the evolution of hominid/human warfare which emphasizes phylogenetic continuity between humans and nonhuman primates, and which does not stipulate that war is a one-time cultural invention.

Van der Dennen’s (1995) investigation of the evolutionary origins of intergroup conflict in social carnivores and primates identified (a) the capability to form polyadic coalitions (selfish and opportunistic cooperation with more than one conspecific) as the necessary precondition, which in turn required (b) sociality; (c) Machiavellian intelligence; and (d) proto-ethnocentrism. Proto-ethnocentrism is supposed to imply some kind of group

identity, that is, the ability to recognize ingroup versus outgroup members, to discriminate between these categories, and to preferentially treat ingroup members to positive reciprocal (altruistic) interactions such as protection, nepotism, and sharing of resources. The 'evolutionario' also outlines the phylogenetic and socio-ecological principles governing group formation, ingroup altruism, outgroup antagonism, and intergroup agonistic behavior (violence and war). In this enterprise the authors may feel like true and proud heirs of Darwin.

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